

# Reducing Food Waste from Food Service Kitchens *in Erie County*



Numerous waste characterization studies show that over 20 percent of trash is food waste<sup>1</sup>. This wasted food – and wasted money – is just part of the story. All of the resources (land, water, energy, labor, manufacturing, packaging, transportation) and all of the associated greenhouse gas emissions that went into growing the food and getting it to the customer are also wasted.

Decreasing the volume of wasted food and preventing it from entering the landfill are important for the development of sustainable food systems, conservation of environmental resources, and reduction of greenhouse gas emissions. This guide is focused on reducing food waste at food service kitchens, such as restaurants, health care facilities, schools, catering providers, and other similar operations.

## FOOD WASTE IN FOOD SERVICE KITCHENS

Food waste from a kitchen is typically caused by overproduction and spoilage, along with over-ordering, equipment malfunction, and quality problems. Food waste costs a facility real money because of:

- **Food purchases** – money spent on food that is not eaten
- **Wasted labor** – staff spend time preparing food that gets thrown away
- **Disposal fees** – larger payments to haul away food waste
- **Energy costs** – increased electric, gas and water use to prepare food that is wasted

Waste prevention saves \$\$\$ - by reducing purchasing, labor, and disposal costs!

## FOOD WASTE MANAGEMENT HIERARCHY

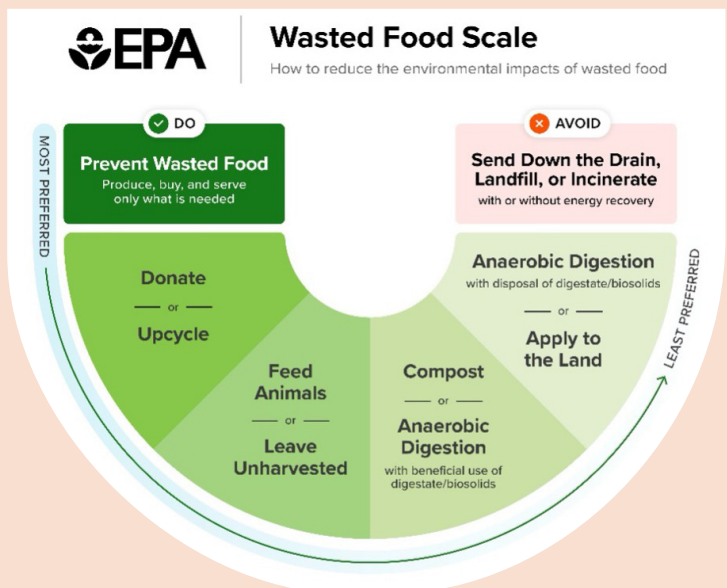
The US EPA published a Wasted Food Scale for management of excess food as shown in **Figure 1**. Prevent Wasted Food (also known as “Source Reduction”) has the largest impact on food waste management because it provides critical social and environmental benefits:

- Prevents excess greenhouse gas emissions
- Avoids unnecessary resource use
- Protects nutrition loss

Food that was not used for its intended purpose can be managed in a variety of ways:

- Donation to feed people
- Recycling through:
  - Creation of animal feed
  - Anaerobic Digestion (AD)
  - Composting

Each of these strategies is discussed further in the following sections.



**Figure 1: US EPA**  
**US EPA Wasted Food Scale**

1. New York City: <https://dsny.cityofnewyork.us/wp-content/uploads/2018/04/2017-Waste-Characterization-Study.pdf>; Maine: <https://umaine.edu/wp-content/uploads/sites/2/2017/04/2011-Maine-Residential-Waste-Characterization-Study.pdf>; Vermont: <https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/2018-VT-Waste-Characterization.pdf>

## BENEFITS OF PREVENTING FOOD WASTE

### Less (or no) food in the trash equals:

- Less trash to manage (& pay for)
- Trash that is much less heavy & much less messy
- Reduced greenhouse gas emissions from landfills

### Saves the kitchen \$\$\$

- Purchase costs
- Labor & energy costs to make food that is not sold/eaten
- Trash disposal fees

### Fewer wasted resources:

- Land, water, energy, labor, manufacturing, packaging, transportation
- Less wasted resources = less greenhouse gas emissions

## FIRST STEPS

Management buy-in is necessary because focusing on reducing food waste does require some resources. One or more staff will need to step back from other duties and focus on observations, measurement, and developing alternatives. Or a facility can hire an outside consultant to help.

- 1: The key first step is to educate staff, especially kitchen staff on the importance of reducing food waste and obtain their buy-in. Staff input and suggestions should be solicited in an ongoing basis. If feasible, small financial incentives can help!
2. The next critical step is to complete an assessment of the current situation. The food waste team and/or a manager should observe kitchen activities for several days:
  - Note the waste produced coupled with its source and the reason why it was thrown away
  - Ideally, each type of waste would be weighed so numerical data is obtained

The evaluation should also include an observation of what customers are throwing away as their waste might inform kitchen decisions and develop an understanding of the quantities of the overall solid waste being generated and the cost of its management, including transportation and disposal. This will enable the measurement of the

overall impact of reduction activities. It might also prompt a focus on strategies to reduce other types of waste, in addition to food.

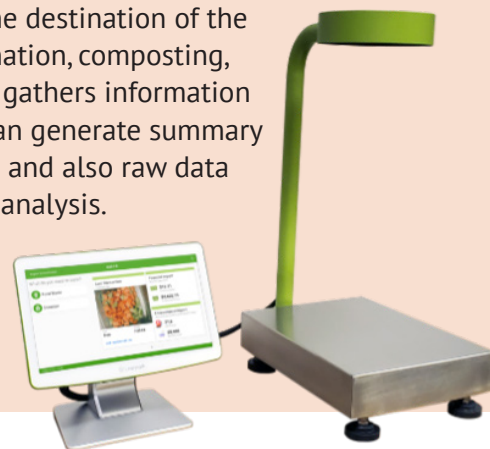
3: After observing and recording, think about the findings:

- What are potential options to reduce food waste?
- Was there anything that might be appropriate for donation to a food/meal program?
- Where would be good locations for collection containers so food waste can be diverted for recycling?

More detail on considering these options is in the following sections.

## LEANPATH 360 TOOL

The Leanpath 360 tool is a sophisticated food waste tracking station with an integrated camera, scale, and display. Users place a container of food waste on the scale and enter some basic information into the attached computer touchscreen using standardized uniform choices for: mealtime and location it was generated, type of food, and the reason it became waste. The system also has the capability to track the destination of the waste, including donation, composting, or trash. The station gathers information in a database that can generate summary and detailed reports and also raw data exports for detailed analysis.



## NEW YORK STATE FOOD DONATION & FOOD SCRAPS RECYCLING LAW

Food donation and diversion to animal feed, compost, or AD are beneficial strategies for all sizes and types of facilities. However, large waste generators are required by law to adopt them. Effective January 1, 2022, the New York State (NYS) Food Donation and Food Scraps Recycling Law requires all businesses and institutions that generate an annual average of two tons of waste food per week or more must:

1. Donate excess edible food
2. Recycle all remaining food scraps if they are within 25 miles of an organics recycler (i.e. composting facility, anaerobic digester, animal feed, etc.)

Some types of facilities are exempt from the law, including:

- Hospitals
- Nursing homes
- Adult care facilities
- K-12 schools

In addition, entities in New York City were exempted because they are covered by Local Law 146 adopted in 2013.<sup>2</sup>

## PREVENT WASTED FOOD

Reducing waste at the source is the preferred option and saves the most money and resources. There are many ideas to evaluate:

- **Evaluate menu options & portions**

Did the observation of what customers are purchasing and throwing away highlight any food options that could be removed? Are there portions that could be reduced? Or can portions

of more than one size be offered? Are there items that are automatically included, like bread or crackers, that could be offered to the customer, but not automatically provided to everyone?

- **Repurposing Leftovers**

Ideally, food that is not used for its original purpose due to overproduction can be properly stored and repurposed as shown in **Figure 2**. Health code requirements typically require that any prepared food must be cooled and properly stored within two hours and reused within 3-days. Another great option is to make soup!

- **Inventory Management**

Are there items that are thrown away because they pass the “best by” date? Could less be purchased to begin with? Are items getting lost in the back and improvements can be made in a “first in – first out” system? If leftovers are often not successfully repurposed within time limits, can there be greater awareness of what is available for reuse and incentives provided for staff to successfully use them?

- **Consider Cooking-to-order**

Instead of preparing a full tray of scrambled eggs, would cooking to order be feasible?

- **Small Batch Cooking**

Small batch cooking can help minimize leftovers. For example, preparing the meal trays for 500 hospital patients can take several hours. Cook two pans of the entrée at the start of the shift, and then wait to cook another until the line starts to use the second tray and everyone better understands how much more is needed.

## HOW FOOD OVERPRODUCTION CAN BE REPURPOSED

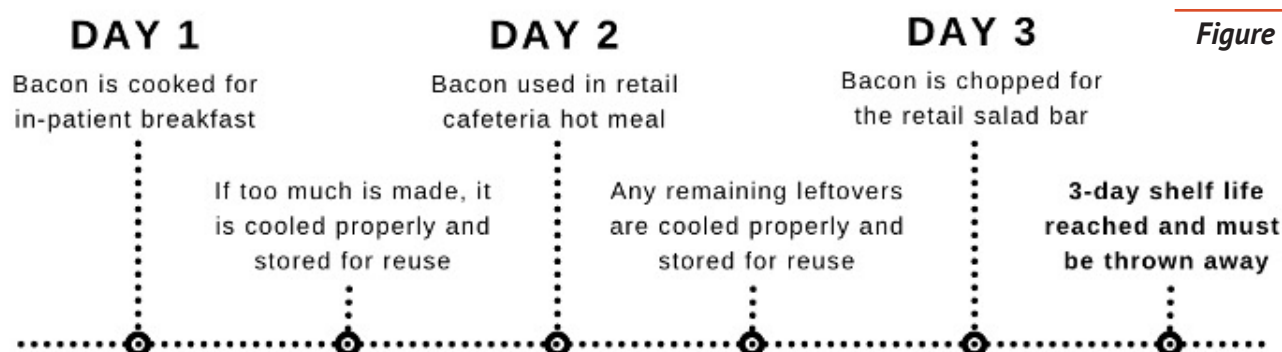


Figure 2:

2. <https://www.nyc.gov/assets/dsny/site/services/food-scraps-and-yard-waste-page/commercial-requirements>



## ERIE COUNTY HEALTH CARE FACILITIES CASE STUDY

The Erie County Department of Environment & Planning partnered with Metz Culinary Management, Leanpath, and the Northeast Waste Management Officials' Association (NEWMOA) to measure food waste and institute reduction strategies in four healthcare settings using the Leanpath360 tool: two large hospitals, a smaller hospital, and an assisted living and rehabilitation facility.

The data collected has helped to advise Metz of types and quantities of wasted food and has been used to inform food purchase orders, meal production, and waste reduction strategies. Approximately every two weeks, Metz managers meet with the chefs at the four facilities to review the Leanpath data and discuss food waste and reduction strategies. The project also made several recommendations in relation to overall waste reduction, including:

- Evaluate offering the option for reusable tableware and utensils for patrons that plan to eat in the cafeteria
- Ensure that all disposable take away containers used are readably recyclable (made from #1 or #2 plastics) - no #6!
- In general, recycling collection from the public is contaminated by items that are not recyclable. Erie County should work with Metz and the hospitals to institute recycling education and improve signage in the cafeterias and throughout the facilities

For more information and to access the case study, scan the QR code or use the web link on the last page of this guide.



## DATE LABELS ≠ SAFETY

A lot of food gets thrown away unnecessarily because date labels are misunderstood. **Date labels are not related to safety**<sup>3</sup>. The dates are determined by the manufacturer and are related to their best guarantee of top quality. But most foods are safe to eat and still of top quality well after the dates. For example, eggs are good for at least three weeks after the sell-by date. Unfortunately, for simplicity, health codes and/or donation outlets often require that items past the stamped date cannot be used and this leads to a lot of unnecessary waste.



## DONATION

Food service kitchens can reduce food waste by donating edible food. **Businesses can receive a tax deduction**<sup>4</sup>, making donation more economically viable. When considering donation, remember that it is for people to eat and needs to be handled accordingly. This includes following temperature and storage guidelines which differ depending on the type of food. To learn more about food safety requirements, review the national Conference for Food Protection's 2016 *Comprehensive Guidance for Food Recovery Programs*<sup>5</sup>. All prepared foods need to be well labeled with at a minimum: the ingredients, when it was made, and when and how it was stored.

Typically, food service kitchens generate an inconsistent stream of unused, but edible prepared food that meets the above requirements. In addition, not all food donation options can accept frozen items or even those requiring refrigeration.

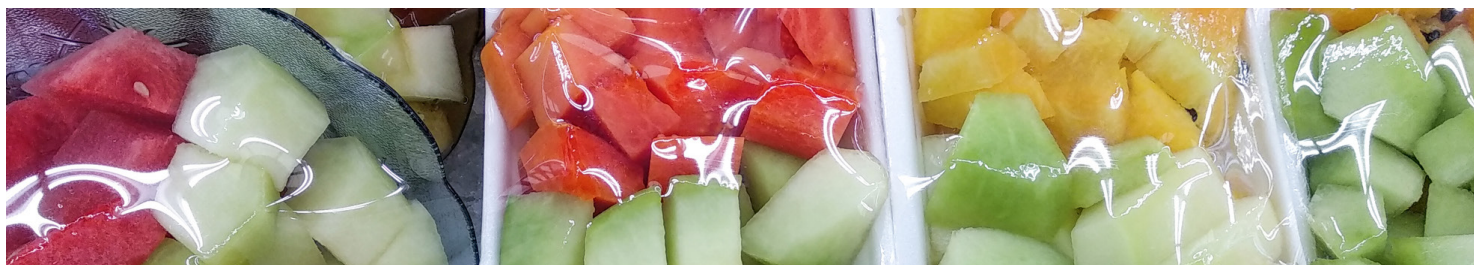
3. New York State does not have any date labeling requirements. The only federal date label requirement is for infant formula.

4. For information on tax deductions please see the New York Donation – Tax Incentives fact sheet at: <https://chlp.org/wp-content/uploads/2013/12/NY-Tax-Incentive-Legal-Fact-Sheet.pdf> or [https://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/taxincentivehls.pdf](https://www.dec.ny.gov/docs/materials_minerals_pdf/taxincentivehls.pdf)

5. Available at: <http://www.foodprotect.org/guides-documents/comprehensive-guidance-for-food-recovery-programs/> (Appendix A is particularly relevant)

## MANY TYPES OF FOOD CAN BE DONATED, AS SHOWN IN THIS SUMMARY OF DONATION GUIDELINES DEVELOPED BY FEEDING AMERICA<sup>6</sup>:

TYPE OF PRODUCT	HANDLING & STORAGE REQUIREMENTS	CODE DATE REQUIREMENTS
Prepared meals (e.g., large pans or individual portions of a cooked meal, soup, and baked goods)	Food can never have left the kitchen or have been served to the public. Thawed meals must be refrigerated at 41° F or below and frozen meals must be kept at 0° F or below	Frozen meals can be donated within 3 months of being frozen, thawed meals must be donated within 3 days, and baked goods within 3-5 days
Packaged meats	Meat must be frozen at 0° F or below	Must be frozen on or before the code date and donated within 3 months after the date it was frozen
Perishable goods (e.g., dairy and produce like fruits and vegetables)	Dairy and pre-cut produce need to be refrigerated at all times at 41° F or below. Whole produce should be stored in a cool, dry area	Produce must be in edible condition – no mold. Liquid dairy, (e.g. milk) must be donated before the date code. Other dairy products (e.g. cheese and yogurt) can be donated up to 7 days past the date code
Non-perishable items (e.g., canned/jarred goods, and packaged dry goods like crackers and cereal)	Stored in original containers off the floor	Must be donated within 30 days after the code date



Therefore, in order to donate prepared food, it is important to find a flexible food rescue partner and establish good communication.

**Tip:** Look for a local organization like a shelter, soup kitchen, or other service agency that serves hot meals and ask if they accept prepared foods. Friends of the Night People in Buffalo could be an option: <https://friendsofnightpeople.com/ways-to-give/food-clothing-drive/>

For general information about food donation in Erie County visit FeedMore WNY: <https://www.feedmorewny.org/>.

### DONORS ARE PROTECTED FROM LIABILITY:

There are federal and state laws that protect businesses and nonprofits that provide and receive donated food<sup>7</sup>. The federal Bill Emerson Good Samaritan Food Donation Act **protects individuals and businesses that donate food in good faith** to a non-profit organization that distributes the donated food to needy populations for free. New York law offers further protections.

6. <https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/Universal-Recycling/Prepared-Meals-Donation-Guidelines.pdf> ;  
<https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/Universal-Recycling/Meat-Donation-Guidelines.pdf> ;  
<https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/Universal-Recycling/Perishable-Donation-Guidelines.pdf> ;  
<https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/Universal-Recycling/Non-Perishable-Donation-Guidelines.pdf>

7. For information on liability protections please see the New York Donation – Liability Protections fact sheet at: <https://chlp.org/wp-content/uploads/2013/12/NY-Liability-Legal-Fact-Sheet.pdf> or [https://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/donationhlfs.pdf](https://www.dec.ny.gov/docs/materials_minerals_pdf/donationhlfs.pdf)



## RECYCLING

After the donation of all the excess edible food, as feasible, all remaining food waste should be recycled by sending it for animal feed, AD, or composting.

Steps to successful food scrap recycling include:

- Find a recycling facility. For up-to-date information visit: <https://www.rit.edu/affiliate/nysp2i/OrganicResourceLocator/>
  - Determine that you can meet their acceptance requirements
- Determine how to get your food waste to the facility
  - Decide to self-transport or hire a hauler
  - To find a hauler visit: [https://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/foodscraptransporters.pdf](https://www.dec.ny.gov/docs/materials_minerals_pdf/foodscraptransporters.pdf)
- Separate food scraps from other waste
  - Many facilities use a 5-gallon covered bucket or a metal food-serving pan at the generation source that they then empty into a more centralized tote or dumpster (depending on the hauler)
  - The emptied bucket or metal pan can then be run through the dishwasher
- Store the food scrap tote or dumpster properly prior to transport to avoid strong odors or attracting insects and rodents (e.g. tightly closed lid and located in an area where it is not in the sun)
  - Using compostable liners in collection containers can help maintain cleanliness of the centralized tote/dumpster and some transporters provide a container rinse service
  - More frequent transport might be needed in the warmer months
- Educate staff about food waste and why recycling is important
  - Use the points made earlier in this Guide on environmental and cost benefits
  - For larger facilities make sure they know compliance is the law
  - Posting a series of signs and refresher training can be good reminders and keep the recycling program working well

## ORGANICS RECYCLING FACILITIES IN (OR NEAR) ERIE COUNTY

Facilities include, but are not limited to:

- EcoVerde Organics in Akron (<https://ecoverdecompost.com>)
- Farmer Pirates Compost in Buffalo (<https://www.farmerpirates.com>)
- Generate Buffalo Digester in West Seneca (<https://www.buffalodigester.com>)
- Generate Niagara Digester in Wheatfield (<http://quasareg.com/anaerobic-digestion>)



## RECYCLING: ANIMAL FEED

Creating animal feed from food scraps is a resource- and energy-efficient practice that benefits both food waste generators and farmers. There are federal laws that regulate the safety of food scraps and type of animals that may be fed food scraps. New York also has laws covering the feeding of food scraps to cattle, sheep and other ruminants, swine, and poultry<sup>8</sup>. In general, any food scraps that contain unprocessed animal products, such as waste meat, must be heat-treated to commercial sterility before being fed to animals. Most food scraps are fed to swine or poultry, not ruminants. Dairy products, eggs, and industrially processed meats can be used for swine or poultry feed without heat treating.

**Tip:** Many facilities simply put unprocessed waste animal products in the trash so their other food scraps can be sent for animal feed without any complication. Food service kitchens can develop a relationship with a local chicken or pig farmer to take their waste food.

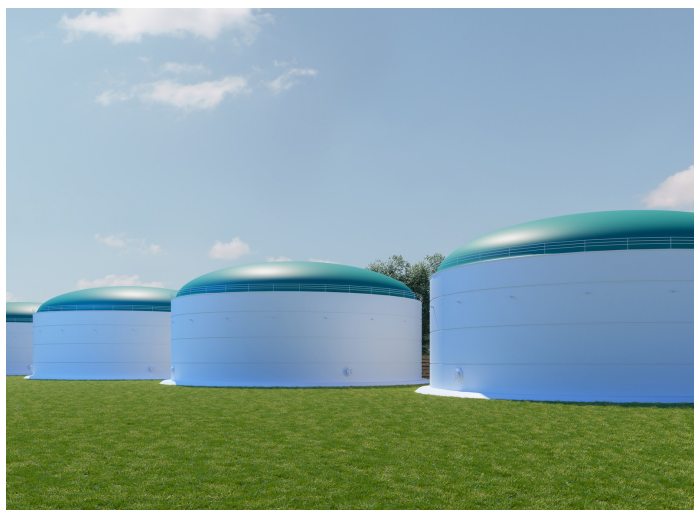
8. For information about food donation for animal feed please see the New York Donation – Feeding Food Scraps to Animals at: <https://chlp.org/wp-content/uploads/2013/12/NY-Animal-Feed-Fact-Sheet.pdf>

As with donation for human consumption, it is important to find a reliable partner and establish good communication. Farms or other animal feed operations should have a beneficial use determination (BUD) from the New York State Department of Environmental Conservation (DEC).

## RECYCLING: ANAEROBIC DIGESTION

Anaerobic digestion (AD) uses microorganisms to break down organic materials in the absence of oxygen. AD facilities produce biogas and digestate. More than half of biogas is methane which can be used as a renewable energy source. The renewable energy produced can be used on-site or sold into the grid. The digestate can be land applied, composted and used as a soil amendment, or processed into fertilizer pellets. AD facilities are expensive to build and require a reliable source(s) of organic material and a reliable outlet for the digestate. Many AD facilities are located on farms in order to manage manure. Others rely on organic waste from a food processing facility. Some AD facilities take in food waste from outside customers and can be found using the links included in the Recycling section on page 6.

**Tip:** Many restaurants, hospitals, schools, and grocery stores throughout New York and in surrounding states work with Natural Upcycling based in Linwood to collect their food waste and bring it to an AD facility. More information is available at: <https://www.naturalupcycling.com>



## RECYCLING: COMPOSTING

Composting preserves nutrients that are beneficial for soil health and reduces the need for chemical fertilizers. Commercial composting facilities take in food waste, combine it with other organic material, maintain adequate moisture and high temperature, and allow it to age in the presence of air. Erie County owns and operates a composting site at the Erie County Alden Correctional Facility. For more information about utilizing the Erie County facility, contact Tyler Hamilton at [tyler.hamilton@erie.gov](mailto:tyler.hamilton@erie.gov) to discuss composting logistics and recycling options in Erie County.

### SUCCESS WITH COMPOSTING AT THE ERIE COUNTY CORRECTIONAL FACILITY

In 2017 Erie County installed a compost site at the Erie County Correctional Facility in Alden, NY that has operated continuously except for a short hiatus during the COVID-19 pandemic. Since the project began, the Erie County Alden Correctional Facility has seen 109 tons of food waste diverted from landfill, 96 metric tons of CO<sub>2</sub> equivalent avoided, and roughly \$20,400 in annual savings. The Alden Correctional Facility has been able to reduce the size of its trash dumpsters and reduce the frequency of pickups. Kitchen staff at the correctional facility has expressed its appreciation of the compost program because they do not have to take garbage bags out to the dumpster as often. They also noted that the food scrap collection bins are easy to use and convenient to scrape food into.

Another option might be to compost on-site if there is the outdoor space and interest from management and staff – for more information about on-site composting contact NYS DEC's Organics Reduction and Recycling Section: [organicrecycling@dec.ny.gov](mailto:organicrecycling@dec.ny.gov)

### NOT ALL PLASTIC IS RECYCLABLE!

Most food service facilities provide some or all of their food in single use containers. Pay attention to the type of plastic being used! **Number 6 plastic is polystyrene and is not recyclable.** Many clear plastic clam shell containers are now being made from #6 PS plastic. Facilities should only utilize clam shell (and other) containers made from #1 PET/ PETE (polyethylene terephthalate) or #2 HDPE (high-density polyethylene) which do have robust recycling markets. Some take-out containers are made from #5 PP (polypropylene) and are recyclable in some markets.



## COMPOSTING POST-CONSUMER FOOD WASTE

Kitchen-generated food waste is relatively easy to collect and generally has low levels of contamination. Collecting food waste from customers is more challenging. Post-consumer food scraps and public-facing collection bins can be contaminated with non-organic materials such as straws, stirrers, cutlery, film plastics, and disposable packaging. If post-consumer food is included, it is important educate customers, have good signage, and monitor customer compliance in order to manage contamination. It is also vital to discuss manageable levels of contamination with the transporter and composting facility.



Erie County is home to over 950,000 residents. Erie County Department of Environment & Planning's mission is to make Erie County a better place through planning and environmental stewardship. Some of its environmental compliance programs include climate action and sustainability, stormwater and watershed management, brownfield redevelopment, solid waste and recycling, composting, and GIS mapping.

## BE SKEPTICAL OF COMPOSTABLE & BIODEGRADABLE CONTAINERS

Many food service facilities offer disposable take-out containers to their customers. To be more environmentally-friendly, facilities often use compostable and biodegradable disposable containers. However, food packaging is often coated in chemicals such as per- and polyfluoroalkyl substances (PFAS) to achieve water-, oil-, and grease-resistance. These chemicals can be harmful to health and enter the environment when composted or disposed. When processed, these chemicals remain in the compost product which is then used in gardens and on agricultural land. In order to receive BPI certification, a compostable product has to have a negative PFAS test result. Some manufacturers have changed their formulations and PFAS-free compostable products are now available. **Make sure to purchase only BPI-certified compostable products.** BPI maintains a database of its certified products at: <https://bpiworld.org/find-certified-products>.

For more information about the project and to access the "Reducing Food Waste at Health Care Facilities in Erie County" case study: <https://www.newmoa.org/projects/food-waste-reduction-in-erie-county-ny/>



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NEWMOA is a non-profit, non-partisan interstate association whose membership is composed of the state environmental agency programs that address hazardous waste, solid waste, pollution prevention, waste site cleanup, and related challenges in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.